not appear to resemble epidermal staphylococcosis as described by Jungherr and Plastridge (1941).

Sections of the skin showed subcutaneous inflammation, with infiltration by polymorphs and lymphocytes and a little oedema. The layer of keratinised cells was thicker than normal, and Gram-stained sections showed Gram-positive cocci (apparently short-chain Streptoccoci) in the loose outer layers. One or two yeast-like bodies were also seen, but sections stained by Grocott's method did not reveal fungal hyphae.

Bacterial cultures yielded heavy growths of anthracoids, Staphylococcus albus (coagulase negative, non-haemolytic) and Streptococcus viridans. Both the cocci could give rise to subcutaneous inflammation, but would probably not get a hold on healthy skin. Virus isolation was not attempted, there being no analogy and no indication of a possible type of virus''.

The nearest approach to a similar condition to be found in the literature seems to be Xanthomatosis as described by Peckham (1955).

I am much indebted to Captain P. R. Symonds for the specimen, Dr. G. I. Sharpe for the photograph and to the staff of the Poultry Department of the Central Veterinary Laboratory for the results of their examinations, and particularly to Mr. E. Boughton for his helpful comments.

References:
Creech, B. G., Rahman, M. M., Reid, B. L., and Couch, J. R. 1958. Exudative diathesis in chicks. *J. Nut.* 64 (1), p. 55.
Jungherr, E. and Plastridge, W. N., (1941). Avian staphylococcosis. *J.A.V.M.A.* 98. p. 27.
Peckham, M. C., (1955). Xanthomatosis in chickens. *Am. J. Vet. Res.* XVI (61). p. 581.

On a variety of Swallow

by James M. Harrison

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On 16th September, 1964 in a strong south-westerly wind with heavy showers of rain, two immature Swallows, *Hirundo rustica rustica* Linnaeus, both females, were found dead under the telegraph wires in the Walland Marsh, Kent.

One of these, as can be seen from the plate, is of the creamy-breasted type, the next commonest colour phase (*fide* Vaurie, 1951.) to the pinkish-breasted bird in the British Isles. The other is of a warm buffy-brown on the under parts. Vaurie (*loc. cit.*) describes the colour of the British birds as pinkish, and in so far as the western mainland populations are concerned states that in the British Isles 13 were pinkish, 4 creamy and only 5 were whitish; in Sweden 1 was creamy and 6 white, while in north-western continental Europe 6 were pinkish, but less so than in the British Isles, 3 were creamy, 2 white, 1 as red as, or redder than *transitiva* from Palestine. Although the number of specimens quoted is not large, the findings suggest that the variation described is clinal in nature, and that the suffusion of the under parts from reddish, through pinkish to white runs on a south-east to north-west line.

This particular buffy-brown specimen, which is the subject of this note, is however, exceptional in that it shows symmetrical spotting on the breast though it does not show any suggestion of a nuchal band.

Of the common Eurasian swallows the species which shows striation of the under parts to the greatest extent is, of course, the Red-rumped Swallow, *Hirundo daurica* L.

IMMATURE SWALLOWS.

Variety on the left. Normal on the right:

It is well known that sexual dimorphism in the Hirundinidae is very slight, and generally in many species of birds spotting and striation are most often to be found in females and immatures, and such markings may well be regarded as primitive.

Under these circumstances one may postulate that such characters found in the adults of a species could point to one in which an arrest in

evolution had occurred. Another pointer in the same direction is provided by those species in which there is feeble, or even absent sexual dimorphism. A strong differentiation of the sexes must have come about from selection pressures, except of course where it has arisen as a result of adaptation serving a functional use as in the case of the difference of bill structure in the Huia, *Hetaralocha acutirostris*. Absence of marked sexual dimorphism is advanced as evidence of a lack of competition in mating, a fact which certainly applies to the Hirundinidae.

In their review of the generic classification of the Swallows, Mayr and Bond (1943), pass some general comments upon the relative characters to which importance can be attached in establishing a classification.

The value of colour patterns is stressed, indeed it is stated that "colour patterns are of considerable help in classification, because they are frequently more conservative in phylogenies than are structural features". The latter are often the result of adaptation and are therefore not to be relied upon as classificatory aids. In considering the pyhlogeny of the Hirundinidae they state that *Phedina*, the Madagascar species, may possibly be related to *Hirundo*, they also state that this species is the "least specialised Swallow"; from this it follows that it is therefore probably also the most primitive member of the family.

It does not resemble *Hirundo* very closely superficially; the under parts are however streaked and the tail is squarish and unspotted.

A further phylogenetic link with the Old World Hirundinidae is provided by *Petrochelidon andecola* (D'Orbigny and Lafresnaye), of the Andes of Peru and Bolivia, in which in the immatures the rump and upper tail-coverts are rufous.

Vaurie (1951 *loc. cit.*) states that all forms of *daurica* are streaked underneath in variable degree, with the nominate race as poorly striated. In *H. striolata* the streaking of the under parts is similarly rather variable, though by and large heavier than in the *H. daurica* forms. Of the *striolata* group, the race *stanfordi* is the heaviest marked.

If it is conceded then that spots and striations are basically equivalent when phylogenetic assessments are made, then in this case it is evident that such characters found occurring in any of the normally non-striated Hirundinidae, must be derived from genes carried in the southern members of the complex. Furthermore it is also probable that the buffish, or pinkish tone of the under parts may be a linked character also derived from such southern and south-eastern elements.

It would seem therefore that the above instance in *Hirundo rustica rustica* provides another example in which colour and pattern forms a pointer in the phylogeny in this group of species.

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References:

Vaurie, C., (1951) Notes on some Asiatic Swallows. *Amer. Mus. Novit.* No. 1529.

Mayr, E. and Bond, J., (1943). Notes on the Generic classification of the Swallows, Hirundinidae. *Ibis*. 85, pp. 314–334.